DNR Project Number 181

Title: Groundwater Pollutant Transfer and Export in Northern Mississippi Loess Hills Watersheds

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Abstract: Control of nonpoint pollution sources has lagged in the 30 years since passage of the Clean Water Act. Agricultural nonpoint pollution is today the main source of impairments to the nation's ground and surface waters. Attaining control of nonpoint sources will require a better understanding of pollution transfer mechanisms and of the water quality outcomes of particular land use practices in particular settings. The groundwater transfer of nitrate, pesticide residues, and P from agricultural landscapes to surface water systems has received little attention relative to overland and shallow-subsurface (drain flow, throughflow) transfer, particularly in the Midwest. Yet a growing body of evidence suggests groundwater transfer can be substantial. This project will contribute a understanding of groundwater's role in delivering pollutants from agricultural landscapes to surface water, and of the quality of groundwater that has resulted from land management practices in the intensively cropped watersheds of the Northern Mississippi Valley Loess Hills. Specific objectives are to: 1) Gain a better understanding of the groundwater transfer of pollutants (nitrate, pesticide residues, and P) from agricultural landscapes to surface water and groundwater's role in watershed pollutant export; 2) Estimate the groundwater export of agricultural pollutants from Northern Mississippi Valley Loess Hills (NMVLH) watersheds; and 3) Assess the status and trend of agrichemical groundwater pollution in NMVLH watersheds.

Work Location: Upper Fever River Watershed

Project Duration: July 1, 2003 to June 30, 2005

Year 1 Budget (2003-04): $29,417
Year 2 Budget (2004-05): $27,350